AMENDMENT

<u>In the Claims:</u>

Please amend the claims as follows:

1. (Currently amended) A method of creating a desired target object based on one or more pre-existing parent objects, the method comprising:

performing a finding operation to find the target object in terms of each of the parent objects; and

performing a building operation to obtain a combined transformation based on the parent objects;

wherein the target object is created by the combined transformation of the parent objects; <u>and</u>

<u>wherein said objects are spatial objects.</u>

2. (Original) The method of creating a desired target object of claim 1, wherein the target object is a point and the one or more pre-existing parent objects comprise a vector and a point

3. (Original) The method of creating a desired target object of claim 2, wherein the building operation comprises a summation.

4. (Original) The method of creating a desired target object of claim 1, wherein the target object is a vector and the one or more pre-existing parent objects comprise plural vectors.

5. (Original) The method of creating a desired target object of claim 4, wherein the building operation comprises a vector operation.

6. (Original) The method of creating a desired target object of claim 1, wherein the target object is a vector and the one or more pre-existing parent objects are selected from the group consisting of: a single point and a single vector.

7. (Original) The method of creating a desired target object of claim 6, wherein the building operation comprises a derivative operation.

8. (Original) The method of creating a desired target object of claim 1, wherein the target object is a vector and the one or more pre-existing parent objects comprise plural points.

9. (Original) The method of creating a desired target object of claim 8, wherein the building operation comprises a difference operation.

10. (Original) The method of creating a desired target object of claim 1, wherein the target object is a set of orthogonal axes and the one or more pre-existing parent objects comprise plural vectors.

11. (Original) The method of creating a desired target object of claim 10, wherein the building operation comprises an alignment operation.

12. (Original) The method of creating a desired target object of claim 1, wherein the target object is a coordinate system and the one or more pre-existing parent objects comprise a point and a set of orthogonal axes.

13. (Original) The method of creating a desired target object of claim 12, wherein the building operation comprises an assembly operation.

14. (Currently amended) A computer system adapted for creating a desired target object based on one or more pre-existing parent objects, the system comprising:

    a processor;

    a memory, addressable by the processor, including software instructions adapted to enable the computer system to perform the steps of:

        performing a finding operation to find the target object in terms of each of the parent objects; and

        performing a building operation to obtain a combined transformation based on the parent objects;

    wherein the target object is created by the combined transformation of the parent objects; and

    wherein said objects are spatial objects.

15. (Original) The computer system of claim 14, wherein the target object is a coordinate system and the one or more pre-existing parent objects comprise a point and a set of orthogonal axes.

16. (Original) The computer system of claim 15, wherein the building operation comprises an assembly operation.

17. (Original) A computer program product for enabling a computer to create a desired target object based on one or more pre-existing parent objects, the computer program product comprising:

software instructions for enabling the computer to perform predetermined operations, and

a computer readable medium embodying the software instructions;

the predetermined operations including the steps of:

performing a finding operation to find the target object in terms of each of the parent objects; and

performing a building operation to obtain a combined transformation based on the parent objects;

wherein the target object is created by the combined transformation of the parent objects; and

wherein said objects are spatial objects.

18. (Original) The computer program product of claim 17, wherein the target object is a coordinate system and the one or more pre-existing parent objects comprise a point and a set of orthogonal axes.

19. (Original) The computer program product of claim 18, wherein the building operation comprises an assembly operation.

20. (Currently amended) A method of creating a desired target object based on a pre-existing parent object and on information explicitly provided by a user, the method comprising:

performing a finding operation to find the target object in terms of the parent object, using the information explicitly provided by the user, to obtain a first transformation;

performing a finding operation to find the parent object with respect to the target object, to obtain a second transformation; and

combining the first and second transformations to create the target object,

wherein said objects are spatial objects.

21. (Currently amended) A computer system adapted for creating a desired target object based on a pre-existing parent object and on information explicitly input by a user, the system comprising:

a processor;

a memory, addressable by the processor, including software instructions adapted to enable the computer system to perform the steps of:

performing a finding operation to find the target object in terms of the parent object, using the information explicitly provided by the user, to obtain a first transformation;

performing a finding operation to find the parent object with respect to the target object, to obtain a second transformation; and

combining the first and second transformations to create the target object,

wherein said objects are spatial objects.

22. (Currently amended) A computer program product for enabling a computer to create a desired target object based on a pre-existing parent object and on information explicitly input by a user, the computer program product comprising:

software instructions for enabling the computer to perform predetermined operations, and

a computer readable medium embodying the software instructions;

the predetermined operations including the steps of:

performing a finding operation to find the target object in terms of the parent object, using the information explicitly provided by the user, to obtain a first transformation;

performing a finding operation to find the parent object with respect to the target object, to obtain a second transformation; and

combining the first and second transformations to create the target object,

wherein said objects are spatial objects.

23. (New) A method for a spacecraft maneuver analyst to model orbital maneuver phenomena on a computer without needing to hard-code a software solution, comprising:

defining an original coordinate system within a graphic user interface of said computer;

defining one or more parent spatial objects relative to said original coordinate system by selection of one or more pre-existing files from within said graphic user interface; and

creating at least one new spatial object based on said one or more parent spatial objects, comprising:

defining said new spatial object relative to said one or more parent spatial objects, wherein said one or more parent spatial objects and said at least one new spatial object are related to orbital maneuver phenomena.

24. (New) The method of claim 23, wherein said one or more parent spatial objects and said at least one new spatial object are selected from the group consisting of coordinate systems, coordinate systems primitives, derivatives of coordinate system primitives, and combinations thereof.

25. (New) The method of claim 23, wherein defining said new spatial object relative to said one or more parent spatial objects comprises:

finding said new spatial object in one parent spatial object and using information explicitly provided by said analyst into the graphic user interface to obtain a first transformation;

finding said one parent spatial object in said new spatial object to obtain a second transformation; and

combining said first and second transformations to create said new spatial object.

26. (New) The method of claim 23, wherein defining said new spatial object relative to said one or more parent spatial objects comprises:

finding said new spatial object in each of said one or more parent spatial objects; and

performing a building operation to obtain a combined transformation based on said parent spatial objects to create said new spatial object.

27. (New) The method of claim 23, wherein defining one or more parent spatial objects relative to said original coordinate system is accomplished by user input, file input, or both.

28. (New) The method of claim 23, wherein said original coordinate system is a default within said graphic user interface of said computer.

29. (New) The method of claim 23, wherein said original coordinate system is selectable within said graphic user interface from pre-existing coordinate systems.

30. (New) The method of claim 23, wherein said new spatial object is subsequently reused by said analyst as a parent spatial object to create a different new spatial object.

31. (New) The method of claim 23, wherein a correction to a parent spatial object results in a correction to said new spatial object.

32. (New) A system for a spacecraft maneuver analyst to model orbital maneuver phenomena on a computer system without needing to hard-code a software solution, comprising:

    a processor;

    a memory, addressable by the processor, including software instructions adapted to enable the computer system to perform the method of claim 23.